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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/669,862
Filing Date: September 24, 2003
Appellant(s): MARTIN, RICHARD J.

John P. Musone of Siemens Corporation Intellectual Property Department
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/31/07 appealing from the Office action mailed 4/20/07.

(1) Real Party in Interest

Appellant's statement indicating that the application is assigned to Siemens Power Generation, Inc., a wholly owned subsidiary of Siemens Corporation of Iselin, New Jersey, appears to be correct.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal, and as such Appellant's statement contained in the brief appears to be correct.

The examiner would like to point out that the heading at the top of pages 2-18 (as numbered at the bottoms of the pages of the brief), appear to contain an incorrect application serial number (10/961,626), in that the correct S. N. for this application is that on the first (cover) page of Appellant's brief, and is in fact 10/669,862.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

Claims 1-7 were canceled earlier in the prosecution of this application.

Claims 8-27 are rejected under 35 U.S.C. 103(a).

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct, as there was no amendment after final submitted.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters.

The brief is deficient with respect to the summary of the claimed subject matter of independent **claim 8**, in that there is no element in figure 1 or figure 2 that has been labeled (2), nor are there any turbine components graphically depicted as such parts.

Figure 1 of this application simply shows a block diagram flow chart, where the first block is labeled (10) and the text therein reads "Mark Turbine Components".

Figure 2 appears to be another type of chart indicating the association of turbines (24) with power plants (26), a power provider (28), a central processing station (22), a component repair facility (30) and a component manufacturing facility (32).

Appellant's reference to "marking a plurality of turbine components 2 with indicia applied to the surface of the components 10" is in error, as is Appellant's reference to page 5, line 22 through page 6, line 9, in this regard since this portion of Appellant's specification instead actually refers to step 1 of the flowchart of figure 1, wherein "10" is the first step simply labeled textually as "Mark Turbine Components".

In actuality, Appellant's complete disclosure only mentions a "turbine component 2" or "turbine components 2" on page 5, lines 8-19, and nowhere else in the drawings, specification or the US Publications which were incorporated by reference at the top of page 6 of Appellant's specification.
With respect to Appellant's summary of dependent **claims 10 and 11**, neither of figures 1 or 2 show that the markings identify the material composition form which at least a portion of the turbine component was manufactured (claim 10), or a

manufacturing step used (claim 11). The indicated portions of the specification do however reference component material or composition.

Appellant indicates that marking(s) identifying a manufacturing step from which at least a portion of the component was made/manufactured is shown in both of figures 1 and 2, however, the only portion of figure 1 which might remotely suggest same is the block (not numerically labeled) connected to block 14 by a dashed line, which bears the text "Repair, refurbish, or replace selected components", with an arrow leading up to block (10) which states "mark turbine components". Accordingly, it is not necessarily clear from this figure that the markings need reflect the material composition of the component, but only that it may be "renumbered" in some manner once it is put back into use. Figure 2 merely shows that there is a component manufacturing facility (32) and a component repair facility (30), but doesn't seem to go as far as to indicate that there is any component marking associated therewith.
Appellant's cited portions of the specification do however reflect the claimed subject matter of dependent claims 10 and 11.

With respect to Appellant's summary of dependent **claim 19**, neither of figures 1 or 2 appear to indicate anything which would show Appellant's claimed recitation of "wherein statistical analysis is performed on the operational data to help estimate the cost of a repair operation".
Appellant's reference to page 9, lines 1-11 should more correctly only reference lines 9-11 of page 9, with respect to performing "statistical analysis, but does not disclose doing so for the purpose of estimating the cost of a repair operation.

Once again, and with respect to Appellant's summary of **claim 20**, there is no showing in either of figures 1 or 2 of or that the "markings are readable by a human looking at the surface of the component", whereas at least the stated portions of Appellant's specification do provide sufficient antecedent basis for the claim language used.

With respect to the summary of **claim 21**, neither of figures 1 or 2 of Appellant's disclosure show the use of a bar code, however, there is support in the specification as indicated by Appellant (p.5, l. 22 through p. 6, l. 9)

With respect to Appellant's summary of **claim 27**, figures 1 and 2 do not show coordinating or matching new, repaired or refurbished turbine components with turbine engines having a particular turbine component need. However, there are a few lines in the specification that do disclose this claimed subject matter.

The Examiner would like to note that Appellant has attempted to provide a summary of the claimed subject matter of independent claim 8 and dependent claims 10, 11, 19-21 and 27, but has not seen fit to summarize and provide the basis for remaining appealed claims 9, 12-18 and 22-26.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,343,251	Herron et al.	1-2002
6,845,306	Henry et al.	1-2005
6,636,813	Isobe et al.	10-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 9, 12-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron et al. (6,343,251) in view of Henry et al. (6,845,306).

With respect to independent claim 8, Herron et al. ('251) discloses a method for monitoring the operation and predicting the part life consumption of turbomachinery such as a gas turbine in an electric powerplant, wherein data regarding the operation of said gas turbines is collected and analyzed so as to provide reports of the operational hours, operating conditions, number of starts, etc., so as to aid in determining the operational life of the turbomachinery (turbine) parts, and for scheduling maintenance as necessary. In the background of the invention (col. 1, ll. 33-40) Herron et al. discloses that it is well known for gas turbines to have many parts and components that are exposed to corrosive combustion gasses, extreme temperatures, centrifugal stresses and other adverse operating conditions, and that these conditions impose stresses and corrosive elements on the gas turbine that cause wear, strain, fatigue, corrosion and other harmful effects on the major rotating components. Column 1, line 53 through col. 2, line. 7 discloses that the components that generally require much attention to maintenance also include such basic gas turbine components as control devices, fuel metering equipment, gas turbine auxiliaries, and load packages, for which preventive maintenance and replacement of parts is scheduled based on the operation history of the gas turbine (col. 1, l. 64 – col. 2, l. 7 in particular). Column 5, lines 1-9 of Herron et al. discloses that sensor signal data may be processed by the controller (14) and outputted as operational data to an on-site monitor (OSM, 16), which may be a local computer system on site at the facility with the gas turbine (where the OSM may monitor several turbines at a particular facility), and that the OSM may monitor data in both real time as well as maintain historical data regarding past operational activities of the gas turbine collected from each gas turbine in one or more databases. Further, col. 5, ll. 10- 32 disclose the use of a remote database (18) to

which the OSMs upload (i.e., its downloaded by the remote database) information regarding many gas turbines and for which maintenance factors that influence part life are collected and stored, and for which maintenance is scheduled depending on the major operating factors stored and detected in the remote database.

However, Herron et al. ('251) does not particularly teach, address or otherwise disclose marking the plurality of components used in the turbines, even though it is notoriously old to use inherent "markings" such as serial numbers on parts for the purpose of identifying individual items that are otherwise similar (e.g., have the same part number), that markings such as serial numbers are generally applied to the surface(s) of components in such a manner so as to be readable by a human looking at said surface, and because figure 3 of Herron et al. ('251) teaches the use of turbine serial numbers (portion 306 on the right hand side of the figure 3,and on the upper left hand side of figure 4 near label 402) in order to identify turbines being monitored.

Henry et al., disclose a component trend monitoring system for monitoring the performance of components (first lines of the abstract), and comparing the performance with stored performance data to accurately trend and predict the failure of components through the use of computer chips attached to various components which receive and store historical and performance data about each component, and a processor for retrieving the stored data from the memory chips. In col. 1, Henry et al., teaches the use of this monitoring or tracking system in conjunction with aircraft auxiliary power (APU) units which are generally gas turbine engines used on aircraft to supply pneumatic power

and/or shaft horsepower when the primary propulsion engines are not running, that an APU may include (among other ancillary parts), a combustor (20) having a primary fuel nozzle (22), a turbine (26), a gearbox (32), an electric generator (34), a lube pump (36), a fuel control unit (38) and a starter motor (40), and that when one of these components fails it may be easily removed by detaching it and replacing it with a new component. In col. 1, line 64 through col. 2, line 9+ of Henry et al., teaches that the APU has a data memory module (DMM) that collects and stores APU operational and performance data as well as the serial number of the APU, which is used for tracking APU health and operating conditions since these types of line replaceable units (LRUs) are often unnecessarily replaced, exchanged or discarded when thought to have failed. In col. 2, line 42 through col. 3, line 4 Henry et al., discloses that the earlier discussed memory chips are imbedded in each LRU during its build, that the data contained therein describes the component by serial number, part number, as-built performance, and other pertinent data which is loaded on a smart chip for keeping track of LRU usage (hours and cycles), and for use with monitoring software that will track and compare the LRU usage and performance to determine when it has failed, or is about to fail, so as to reduce the chance for an unscheduled replacement thereby reducing operational cost. Further, in col. 3, ll. 58-62 Henry et al. teaches that these chips may be located with any component where there may be a need to track usage or where there may be a desire to know when a component has failed or is about to fail, where the following paragraph again teaches the use of part number as well as serial number information (data).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the serial number and/or part number based

tracking of turbine/LRU components as taught by Henry et al. ('306), within the context of the turbine operation monitoring and part life consumption prediction method of Herron et al. ('251), for the purpose of tracking the operational history and predicting the useful life of individually recognizable turbine components by applying the known technique of recording and storing operational/use data in conjunction with the part and serial numbers of components in the turbine being monitored (as taught by Henry et al), within the context of the turbine monitoring system of Herron et al., since one of ordinary skill in the art at the time the invention was made would only be applying a known technique (monitoring the use of individual parts by serial number), to a known similar type device, for the purpose of the predictable result of tracking individual components and predicting or determining the part's life consumption, within in a turbine being monitored by a turbine control system.

With respect to dependent claim 9, which recites identifying a location where at least a portion of the turbine component was manufactured, please see col. 3, line 63 through col. 4, line 4 of Henry et al. ('306), which teaches that data stored on the chips may include the part number, serial number, build location, whether the part is new or repaired, the type of repair, and any other data as determined to be necessary (as noted above with respect to independent claim 8).

With respect to claim 12, which recites identifying a repair procedure that at least a portion of the turbine component underwent, please see col. 4, ll. 1-3 wherein Henry et al. discloses that data stored on the chip may also include data or information with respect to

whether the part is new or repaired, and the type of repair if the part has been repaired (again, as noted above).

With respect to claim 13, which recites that the operational data stored is selected from the group comprising equivalent base hours and equivalent starts, please see at least col. 2, line 26–44 of Herron et al., as well as col. 2, ll. 48-50 and col. 6, ll. 1-4 of Henry et al.

With respect to claim 14, which recites that the operational data includes the turbine in which the component is placed, please see at least col. 12, ll. 49-58 of Herron et al. which teaches that the summary reports for various turbines are associated with or represented by serial numbers in column (1402) of figure 12, as well as col. 4, ll. 27-35 of Henry et al., in which it is taught that the chips located with the LRUs may be programmed to look at the first two memory locations for a part number and serial number of an LRU in order to determine if this is a new LRU or if it had been replaced as well as col. 5, line 66 through col. 6, line 4 which discloses monitoring the LRUs individually by part and serial number.

With respect to claim 15, which recites that one of the desired aspects [being tracked] is remaining life of the turbine component, please see at least col. 2, ll. 26-28 of Herron et al. which discloses predicting the expected operating life of various components of a turbine as well as at least col. 2, ll. 53-60 of Henry et al. which teaches the use of

monitoring software to track an LRU and determine when a component has failed or is about to fail (i.e., remaining useful life).

With respect to claim 16, which recites that the desired aspect of the turbine component includes a description of the turbine component, please again see at least col. 2, ll. 42-52 of Henry et al. wherein it is taught that the memory chip embedded in each LRU contains data that describes the component by serial number, part number, as-built performance, and other pertinent data, where (as noted above) the top of col. 4 of Henry et al. further teaches that the data on the chip may also include build location, whether the part is new or repaired, the type of repair, and other data as determined necessary.

With respect to claims 17 and 18, which respectively recite that the turbine is a land based combustion turbine engine (claim 17), and that the turbine is a part of a powerplant that produces electricity (claim 18), please see the whole of Herron et al. which is directed to a system and method of collecting and analyzing data regarding the operation of gas turbines, where the entries in the upper portion of figure 4 include the names of facilities such as China light and power, Israel Electric, and Virginia Electric and Power Co.

With respect to claim 20, which recite that the markings are readable by a human looking at the surface of the component, the examiner notes that it is well known for humans to be able to read serial numbers and lettering stamped, engraved or otherwise marked onto the surface of components to be tracked.

Claims 10, 11, 19 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron et al. ('251) and Henry et al. ('306), as applied to independent claim 8 above, and further in view of Isobe et al. (6,636,813).

The combination of Herron et al., and Henry et al., taught above with respect to independent claim 8, provides for a method of tracking desired aspects of marked turbine components using data obtained and uploaded from turbine control systems to a central processing station, but does not necessarily address the composition from which at least a portion of the turbine component was manufactured (claim 10), identify a manufacturing step (claim 11) or perform statistical analysis on the operational data to help estimate the cost of a repair operation (claim 19), make use of a bar code (claim 21), location of a marked turbine component (claim 22), related operational data (claim 23), when and where the component was manufactured (claim 24), which turbine engine(s) the component was used (claim 25), any repair or refurbishment that was performed on the marked component (claim 26), and whether a component is coordinated or matched with turbines needing a particular component (claim 27).

In addition to the previous teachings of Henry et al. ('306) with respect to tracking component usage and the use of serial and part numbers to track line replacable units (LRUs), Isobe et al. ('813) further discloses a service life management system for high temperature parts of a gas turbine in which a server manages a plurality of client systems (subprograms) that are dedicated to different objects and share respective element data such as real component damage, design materials, etc., which are necessary for the

evaluation of remaining life, and enables the operation of the gas turbine to be optimized based on the damage of the evaluated parts, thereby contributing to the operational cost reduction of the gas turbine (from the abstract). What Applicant refers to as a statistical analysis is referred to as an analytical evaluation and as a result of tendency evaluation by Isobe et al., as shown in at least figure 3, figures 6B and 6C, figure 7, figure 8, figure 14, figure 15, and especially in figure 16 wherein flow chart block (12) includes a cost evaluation database.

The composition and manufacturing step considerations of claims 10 and 11 are considered to include whether or not a thermal barrier coating is or has been applied (a material composition, in addition to that of the turbine blade material itself), and the coating of the blade is also considered to be a manufacturing process step with the context of claim 11. Column 3, lines 6-27 and 49-63 disclose the essence of the remaining life management system of Isobe et al. as it pertains to the above claims in question, where col. 6, ll. 1-35 further teaches the evaluation process for turbine parts and the evaluation of their remaining life. Column 10, lines 22-28 and col. 12, ll. 25-57 disclose calculating a total cost for repairing a particular component.

With respect to claim 21-24, which depend from claim 8, and further recite that the turbine components are marked with a bar code, including the location of the marked components, operational data associated with the components, and also including when and where the component was manufactured, please note the above sections of Henry et al. ('306), in particular col. 3, line 52 through col. 4, line 26 wherein Henry et al. teaches tracking parts or components with respect to their usage, build location, types of repairs,

and doing so by means of a part number and serial number, as well as acquiring data relating to hours accumulated and number of starts (operation data). Furthermore, and with respect to claim 21, it is notoriously old and well known to make use of bar codes for the purpose of identifying and tracking items, thereby yielding the use of a known technique to yield a predictable result of identifying and distinguishing between similar types of components in the same manner that one would with the use of serial numbers as taught previously by Henry et al.

With respect to claims 25-27, which recite further including information as to in which unit a component was used (claim 25), information with respect to repair or refurbishment of any of the components (claim 26), and where a new, repaired or refurbished component is coordinated or matched with turbine engines needing such a component (claim 27), please note that in the above combination of Herron et al. and Henry et al., both are concerned with tracking trends for turbine components so that the individual components may be replaced in a timely manner and repaired if possible for further re-use in the same or another similar unit, where Isobe et al. ('813) further explicitly teaches and discloses tracking component information with respect to real component damage, design of the components, materials used, etc., for the evaluation of the remaining useful life of components (from the abstract as well as figure 7, figure 16, figure 27C (with respect to multiple repairs of the same component), and at least col. 6, lines 1-35, col. 9, line 55 through col. 10, line 28 (with respect to minimization of operational costs), and col. 12, lines 25-53, of Isobe et al. ('813).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the teachings of Isobe et al. ('813), within the context of the above combination of Herron et al. ('251) and Henry et al. ('306), because all three are directed to the monitoring of turbine systems for the purpose of determining the useful life or eminent failure of a turbine component, so as to operate the turbine system in the most cost effective manner and without unnecessary disruption or delay due to unnecessary/premature repairs, or conversely because of failure of a turbine as a whole when a single component is allowed to fail at an inopportune time.

(10) Response to Argument

Appellant's multitude of arguments are each addressed by the Examiner below in the order in which they are presented in Appellant's brief.

With respect to Appellant's arguments as per the rejection of independent claim 8 as being rejected under 35 U. S. C. § 103(a) as being obvious over Herron et al. ('251) in view of Henry et al. ('306), Appellant argues that the Examiner's position is that the "chip" of Henry et al. ('306) is to be bodily implemented within the monitoring system of Herron et al. ('251).

First and foremost, the Examiner does not necessarily expect to bodily incorporate the computer chips of Henry et al. into the monitoring system of Herron et al., but the teachings of Henry et al. with respect to a "component trend monitoring system", into and within the system "for collecting and analyzing data regarding operation of gas turbines" of

Herron et al., which further has as a title "method and system for monitoring the *part life consumption* of turbo machinery" (emphasis added). The Examiner's premise is that the teaching of Henry et al. with respect to the use of turbine component *part numbers* and *serial numbers* can easily be implemented within a software database type turbine monitoring system of Herron et al., since col. 2 line 26 through col. 3 line 16 of Herron et al. already teaches and discloses determining the operating life of various turbine components and actual usage of that gas turbine and the part within the turbine (col. 2, lines 62-64, for the latter teaching within Herron et al), and Herron et al. already makes use of the serial numbers of turbines as a whole, for the purpose of tracking their use and operating characteristics. In this regard please again see figures 4 and 12 of Herron et al., as well as column 12, lines 49-58 (listing of gas turbines by serial number).

Appellant's independent claim 8 recites the step of "marking a plurality of turbine components with indicia applied to the surface of the components", and argues that 1) this is not shown in the applied prior art, and that 2) the bodily incorporation of the "chips" of Henry et al. within the context of Herron et al., would not be possible because there would be no reasonable expectation of success due to the "extremely high turbine temperature within which many of the turbine components operate", referring to Appellant's page 1, lines 17-18 (2700° F) and the 37 CFR 1.132 declaration of the inventor Mr. Richard Martin.

The Examiner has taken the position that since both Herron et al. and Henry et al. teach the use of serial numbers for tracking purposes, and especially since Henry et al.,

expressly teaches storing component part numbers and serial numbers for use in tracking and monitoring the line replaceable units (LRUs) of an auxiliary power unit (APU), it would be obvious to use part and serial numbers to track the use of such components. The only real outstanding consideration is whether or not it is either obvious in view of the above teachings to expect that these part and serial numbers are either inherently "indicia applied to the surface of the components" such as stamped serial numbers applied to manufactured components in the normal production process used for quality control and identification purposes, or otherwise whether it would be considered notoriously old and well known in the art to make use of serial numbers on such parts for the purpose of identification, warranty and the above maintenance purpose taught by Henry et al.

Appellant's arguments with respect to the bodily incorporation of the "chips" of Henry et al. into the turbine monitoring system of Herron et al. due to the temperatures involved in the combustion process, is not necessarily valid because Appellant's independent claim 8 (broadly) recites first marking a plurality of turbine components and subsequently placing the marked components into a plurality of turbines. In this respect Appellant's arguments and the declaration of Mr. Martin are addressing a narrow interpretation of their claims, especially in reference to "withstand[ing] the extremely high turbine temperature within which *many* [emphasis added] of the turbine components operate". The Examiner's point here is that even though Appellant's claim recites putting marked parts "in" a plurality of turbines, there are certainly parts "in" turbines which are not necessarily exposed to those cited "excessive temperatures, such as a gearbox, electric generator, lube pump, fuel control unit and starter motor and other ancillary "components"

in a turbine. Furthermore, the inventor's own declaration (that of Mr. Richard Martin) also suggests that there may be turbine components which are not exposed to the extremely high turbine temperatures. This is particularly significant because nowhere in independent claim 8, nor in any of the dependent claims doe Appellant actually claim *which* turbine components are being marked, and nowhere does Appellant actually claim that these "marked turbine components" are exposed to "extremely high turbine temperature within many of the turbine components operate, which can be in excess of 2700° F".

With respect to Appellant's arguments citing MPEP 2143.02 (and changing the principle of operation), the Examiner believes this has been addressed immediately above in that it would still be entirely possible to even bodily incorporate the teaching of Henry et al., within the context of the turbine monitoring system of Herron et al. for those components not exposed to the temperatures involved in the combustion process itself.

With respect to Appellant's argument citing MPEP 716.01, requesting an explanation as to why the declaration of Mr. Richard Martin is deemed insufficient in view of the claimed subject matter, the Examiner believes this has now been remedied by 1) the above comments regarding the lack of specific claim language actually reciting exposure to "temperatures in excess of 2700° F", and 2) the fact that Examiner's primary grounds of rejection are more along the line that it is well known to use part numbers and serial numbers to track machine components in general, and the combination of Herron et al. ('251) and Henry et al. ('306) provides for a specific application of a known technique for the same purpose with an expectation of a predictable result of monitoring and

predicting the part life consumption of turbines, and being able to identify particular turbine components that have been exposed to the temperature of the combustion process ("hot-gas-path components that require regular replacement and are the subject of regular preventive maintenance and replacement programs, Herron et al., col. 1, ll. 53-63).

Appellant's argument III, having four parts, in toto amounts to whether or not it would be either inherent or obvious, given the above teachings of both Herron et al. and Henry et al., that the turbine components requiring regular and maintenance and replacement would already have (or that it would be obvious to provide) part numbers and or/serial number indicia on their surface so that such components could be individually tracked when still in the turbine and subsequently when removed therefrom, especially since Henry et al. specifically mentions the use of serial numbers of components for the purpose gathering trending (use) information for those particular components. Accordingly, the "chips" of Henry et al. associate the individual serial number information of each component with the usage (hours and cycles) as well as compare its current performance with the as-built performance (Henry et al., col. 2, ll. 42-52). The Examiner's position is that this is essentially only possible because each of these tracked components already has serial number (if not part number) indicia stamped or inscribed onto a surface of the component. Conversely, if this is not already done by Henry et al. as a matter of course, then it would have been obvious to one of ordinary skill in the art at the time the invention was made to identify each component of a turbine (such as individually replaceable turbine blades that otherwise look alike) with separately identifiable indicia such as the serial number and part number already taught by Henry et al.

Furthermore, and with regard to Appellant's statement in the third full paragraph of page 9 of the brief which goes "[a]s previously explained, just because it is known to mark the surface of components does not require a finding of nonobviousness for this particular invention in view of the prior art", it is believed that Appellant meant to say " does not require a finding of *obviousness*", and additionally it seems that Appellant has just substantiated that it is know to "mark the surface of components". And as such, this would be taken as admitted prior art.

Appellant argues that MPEP 2144.03 "decidedly frowns upon reliance on the contention that if an aspect of the claimed invention is "notoriously old" then its combination with other limitations is obvious, and requires the Examiner to follow a detailed procedure when making such a contention, and suggests that the Examiner has not followed this procedure. The Examiner suggests that such a detailed procedure has at least been applied above in response to Appellant's appeal brief and voluminous comments and arguments, if indeed it had not been done earlier. The Examiner submits that there is no improper or impermissible hindsight in this grounds of rejection because the use of serial numbers and part number stampings is, as Appellant admitted "notoriously old in the art, both Herron et al. and Henry et al. (Henry et al. in particular), teach the use of serial numbers for tracking purposes in the field of determining part life consumption of turbomachinery (turbines), and because a known technique (the use of serial numbers, indicia, applied to the surface of components) is being used for its intended purpose of tracking and identifying individual similar type components (for instance individually replaceable turbine blade components), for the purpose of monitoring

said components that require regular replacement and are subject to preventive maintenance and replacement programs.

With respect to Appellant's arguments relating to the rejection of claims 10, 11, 19, and 21-27 under 35 U.S.C. 103(a) as being obvious over Herron et al. ('251) and Henry et al. (306), further in view of Isobe et al. ('813), Appellant argues that Isobe et al. "(2) does not teach or suggest that components such as turbine blades are individually evaluated and tracked" (in the middle of the first full paragraph at the top of page 12 of Appellant's brief).

First and foremost, Appellant's argument is narrower in scope than the claimed subject matter in that only "turbine components", in general, are being claimed, and nowhere in any of claims 8-27 does Appellant actually recite or claim "turbine blades".

Secondly, Isobe et al. ('813) expressly teaches and discloses in the background art (col. 1, ll. 13-21) that a combustor, nozzle blades, etc. which are high temperature parts of a gas turbine, are located in a channel of the combustion gas of a very high temperature, and therefore suffer damages such as thermal fatigue, cracking, creep and deformation, which break out due to the thermal strain induced repeatedly in connection with start-ups and shutdowns. Farther down in column 1, lines 40+ Isobe et al. discloses that when putting a gas turbine into operation it is periodically inspected and the parts are inspected for damages, and if necessary a part is repaired or replaced. Column 2, lines 44-47 disclose obtaining damage and remaining life of an object part, and that turbine operation is optimized based on the evaluation of damage to evaluated parts.

With respect to Appellant's arguments suggesting that there are no teachings relating the material, repairs or refurbishment to marks identifying a material composition, manufacture, etc, please see col. 3, lines 1-27 and 49-63 wherein Isobe et al., first teaches the use of a server (database) system for managing a program for evaluating remaining life of the system as a whole, including management of data relating to repaired members in a database belonging to the client system, the use of a materials database, life management based on the evaluation of damage growth such as a crack in each part, determining repair and replacement so as to gain a beneficial economic effect, performing the above-described damage growth analysis a number of times including alteration of the time of repair, repair method and a time of coating application so as to gain the largest economic effect. Lastly, col. 4, ll. 5-9 of Isobe et al. expressly teaches that the evaluation is performed for each part. Once again, one might wonder how these identical components could be individually tracked is it were not for something like serial numbers to distinguish between similarly formed components which may otherwise have endured completely different operating conditions leading to differences of strain, creep, etc., where such serial number stampings would also be readable by a human looking at its surface.

With respect to Appellant's arguments relating to dependent claim 21, and the recitation that the turbine components are marked with a bar code, the Examiner's position is that bar codes, like the use of serial numbers, are notoriously old in the art, especially where computer databases are used for product tracking and management, because of their mechanized nature of data input and the reduction of human error involved therewith. Furthermore, the use of barcodes applied to the surface of

components as indicia to facilitate their tracking, would once again be the use of a known technique to a known device with a reasonable expectation of the predictable result of being able to track individual components in a more mechanized and potentially electronically readable manner, usable with database and management programs without having to manually enter component information into a computer, as would be the case with stamped or otherwise marked indicia such as serial numbers requiring additional human intervention.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Edward J. Pipala

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SUPERVISORY PATENT EXAMINER

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